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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

DEC 16 1998

Mr. Stanislaw Leja
Acting Perimeter Areas Section Manager
Nuclear Waste Program
State of Washington
Department of Ecology
1315 W. Fourth Avenue
Kennewick, Washington 99336-6018

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352-0539

Dear Messrs. Alexander and Sherwood:

TRANSMITTAL OF FISCAL YEAR 1999 SOIL VAPOR EXTRACTION SYSTEM (VES) OPERATING PLAN FOR 200-ZP-2

Attached for your information is the subject document. The Soil VES operating plan was approved and signed by the U.S. Department of Energy, Richland Operations Office, and the U.S. Environmental Protection Agency at the Unit Managers' Meeting on November 18, 1998.

If you have any questions or would like to schedule a meeting to discuss these responses, please contact me at 373-9631.

Sincerely,

Arlene C. Tortoso

Arlene C. Tortoso, Project Manager
Groundwater Project

GWP:ACT

Attachment

cc w/attach:
J. W. Donnelly, Ecology
D. A. Faulk, EPA
M. K. Harmon, EM-442

cc w/o attach:
M. A. Buckmaster, BHI
G. C. Henckel, BHI

APPROVAL OF 200-ZP-2 OPERATING PLAN FOR FY 1999

The Unit Managers for the 200-ZP-2 Operable Unit approve the attached FY 1999 Soil Vapor Extraction System Operating Plan for 200-ZP-2.

Arlene C. Tortoso 11/18/98

A. C. Tortoso Date
U.S. Department of Energy
Richland Operations Office

11-18-98

D. A. Faulk Date
U.S. Environmental Protection Agency
Region X, Hanford Office

FY 1999 SOIL VAPOR EXTRACTION SYSTEM OPERATING PLAN FOR 200-ZP-2

Soil vapor extraction will be used at the 200-ZP-2 Operable Unit during FY99 to remove carbon tetrachloride from the vadose zone. The primary objectives for this remediation are protection of the groundwater and mass removal. Only the 14.2 m^3/min soil vapor extraction (SVE) system will be operated. Two sites will be remediated using SVE: the Z-9 site and the Z-1A/Z-18/Z-12 (Z-1A) site. Specific on-line wells will be selected prior to start-up at each site based on vapor monitoring, previous concentration trends, and location. These site-specific plans will be presented to the Unit Managers for approval prior to implementation. Based on characterization data collected at on-line wells during operation, the mix of on-line wells may be reconfigured during operations to optimize removal. Passive soil vapor extraction will be implemented at selected wells. The passive SVE plan will be presented to the Unit Managers for approval prior to implementation.

Soil vapor monitoring will be conducted at vadose zone locations near the groundwater, the Plio-Pleistocene layer, and the ground surface at the Z-1A and Z-9 sites while they are not being actively remediated using SVE. The soil vapor monitoring plan for both sites from October 1998 through March 1999 is included with this operating plan. Soil vapor monitoring plans for just the Z-9 and Z-1A sites from April 1999 through September 1999 will be presented to the Unit Managers for approval prior to implementation. If carbon tetrachloride vapor concentrations increase such that the carbon tetrachloride contamination may impact human health or the environment (including groundwater), the Unit Managers will decide on the appropriate response to mitigate the problem (e.g., relocating the vapor extraction system to address the problem).

The schedule for SVE operations and soil vapor monitoring is:

October 1998 through March 1999:

- Maintain the SVE system in standby mode at the Z-9 site
- Monitor soil vapor concentrations at the Z-9 and Z-1A sites

April 1999 through June 1999:

- Operate the SVE system at the Z-9 site
- Monitor soil vapor concentrations at the Z-1A site

July 1999 through September 1999:

- Operate the SVE system at the Z-1A site
- Monitor soil vapor concentrations at the Z-9 site

VADOSE ZONE MONITORING PLAN FOR 200-ZP-2, OCTOBER 1998 THROUGH MARCH 1999

Scope: Monitor carbon tetrachloride soil gas concentrations at selected probes and wells during the winter shutdown of the soil vapor extraction (SVE) systems. The components of this scope are:

- collect soil gas samples using the rebound study sampling method and sampling pump
- analyze soil gas samples for carbon tetrachloride using B&K at field screening level
- evaluate concentration trends
- report results to 200-ZP-2 Unit Managers

Purpose: (1) To be cognizant of carbon tetrachloride concentrations and trends at the vadose-atmosphere and vadose-groundwater interfaces to ensure that non-operation of SVE systems is not negatively impacting groundwater or atmosphere. (2) To be cognizant of carbon tetrachloride concentrations and trends near the lower permeability Plio-Pleistocene layer to provide an indication of concentrations that can be expected during restart of SVE operations and to support selection of on-line wells.

Duration: Six months, October 1998 through March 1999.

Monitoring Frequency: Monthly. It is assumed that a sampler will spend 8 hrs/month for collection and analysis of samples and that a project scientist will spend 4 hrs/month for evaluation and reporting of results. Based on the rebound study and FY98 monitoring experiences, sampling and analysis of 25-30 samples is reasonable for an 8-hour day.

Monitoring Locations: Locations were selected to focus carbon tetrachloride monitoring near the vadose-atmosphere and vadose-groundwater interfaces and near the Plio-Pleistocene layer. At the recommendation of the project scientist, and with approval from the BHI task lead, these monitoring locations could be revised based on developing trends, accessibility, and/or recommendations of the sampler.

Target Zone	Z-1A	Z-9	Total
Shallow (1.5 m)	3	3	6
Near surface (3-10 m)	3	3	6
Plio-Pleistocene (25-45 m)	6	7	13
Groundwater (55-65 m)	3	2	5
Total	15	15	30